

Functional Distribution of Working Time in Five County Health Departments

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IN the fall and winter of 1952-53, the Yale Public Health Personnel Research Project conducted a time study in five county health departments in Maryland. As explained in a previous article (1), this study was designed to measure the allocation of time to technical activities (usually activities associated with direct services), ancillary activities (essential but usually routine, stereotyped activities), administration, and community activities. It was hoped that the data obtained, together with data collected through interviews, would provide new knowledge about the public health worker and his job.

Participating in the time study were 114 professional and semiprofessional workers—85 percent of those meeting the qualifications established by the Yale project (2). They were classified according to public health service, which was usually but not always synonymous with discipline, as follows: medical service, 8; nursing service, 71; sanitation service, 11; laboratory service, 3; secretarial service, 13; and other services, 8. Time logs were kept 2 days

each month for the 5-month period, September 1952 through January 1953. Different days of the week and different weeks of the month were chosen so that the data would be representative of the period. Information as to place in the administrative hierarchy, educational background, and salary was obtained through interviews. (Details of the methods used can be found in references 1 and 2.)

The Working Day

The average daily elapsed time on the job, on the basis of a 5-day week, for all workers in the five county health departments was 8 hours and 41 minutes. An average of 57 minutes daily was spent in personal activities, such as meals, "coffee hours," rest periods, and sick leave. Thus, the effective working day was 7 hours and 44 minutes.

The average working day of 8 hours and 40 minutes for medical personnel was approximately an hour longer than the average working day of the personnel in the other services. As might have been anticipated, executive, supervisory, and consultant personnel worked longer hours than staff personnel.

For all personnel, the working time was allocated to the four functional categories as follows: 37 percent to technical activities, 33 percent to ancillary activities, 17 percent to administration, and 12 percent to community relations and organization. The time spent in these activities in relation to service affiliation, position in the administrative hierarchy, level

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Table 1. Percentage of working time devoted to each of 20 activity categories, by service, in five county health departments in Maryland

Activity category	Service						
	Med- ical	Nurs- ing	Sanita- tion	Labora- tory	Secre- tarial	Other	All
Technical activities.....	28.4	40.5	51.6	54.2	5.7	41.7	37.2
Ancillary activities.....	10.4	29.1	31.1	42.9	79.1	22.9	33.2
Administration.....	34.2	17.5	7.7	2.4	6.1	20.9	16.5
Program planning within health department.....	8.1	4.5	1.8	0	.3	4.0	3.9
Giving supervision and training.....	11.6	6.8	2.9	1.3	1.4	5.5	6.0
Giving personnel supervision.....	6.5	3.9	1.4	1.3	1.4	3.8	3.5
Planning and giving individual inservice training.....	1.6	1.2	.6	0	0	.5	1.0
Planning and giving group inservice training.....	3.5	1.7	.9	0	0	1.2	1.5
Receiving supervision, education, and training.....	9.3	5.5	2.3	1.0	1.6	6.0	5.0
Supervision.....	.8	1.8	.3	0	1.2	.8	1.4
Education and training.....	8.5	3.7	2.0	1.0	.4	5.2	3.6
Management.....	5.2	.7	.7	.1	2.8	5.4	1.6
Personnel.....	2.5	.4	.1	0	.7	1.3	.6
Financial.....	.5	0	.2	0	1.0	1.8	.3
General services.....	2.2	.3	.4	.1	1.1	2.3	.7
Community relations and organization.....	25.2	11.9	6.1	.2	8.4	13.0	11.9
Activities with other agencies.....	20.6	6.4	3.7	0	.5	3.8	6.2
Joint program planning.....	11.3	4.4	2.1	0	.1	2.8	4.0
Activities with other agencies, except health depart- ments.....	5.3	1.9	1.0	0	.4	.9	1.8
Activities with other health departments.....	4.1	.1	.6	0	0	.1	.4
Public information and education.....	4.4	5.1	2.4	.2	7.9	6.4	5.2
Information services.....	.9	3.2	1.8	.2	7.4	2.1	3.2
Planning mass media.....	1.2	.8	0	0	.1	.8	.7
Talks to public.....	1.2	.5	.6	0	0	3.0	.7
Group organization.....	1.1	.6	0	0	.4	.5	.6
Giving professional education.....	.2	.4	0	0	0	2.8	.5
Social activities.....	1.6	1.0	3.3	.2	.8	2.5	1.3

of education and public health training, and salary is shown in the accompanying tables:

Technical Activities

Personnel of the sanitation service devoted more time to technical, or direct service, activities than did the other health department workers. Whereas technical activities accounted for 37 percent of the time of all the workers, they absorbed more than 50 percent of the time of sanitation personnel, 40 percent of the nurses' time, about 30 percent of the time of medical personnel, and about 6 percent of the time of the secretarial group (table 1). It is surprising to find secretarial personnel engaged in technical services even to this limited extent

High-echelon personnel, with the exception of program directors and consultants, devoted much less time than did junior staff personnel to these activities (table 2). Twenty-five percent of the time of all high-echelon personnel was devoted to technical activities, as compared with 41 percent of the staff's time.

Level of education did not seem to be a major determining factor in the extent of participation in technical activities, but the amount of public health training was (tables 3 and 4). Whereas workers without graduate public health training spent about 39 percent of their time in technical activities, those with graduate public health training devoted only 24 percent of their time to these activities.

There was no correlation between salary and

percentage of time spent in technical activities (table 5).

Ancillary Activities

Personnel of the nursing and sanitation services spent about 30 percent of their working time in performing ancillary, or supporting, activities, near the average for all personnel, but medical personnel spent only 10 percent of

their time in these activities (table 1). Secretarial personnel, even though all those whose work was entirely restricted to ancillary activities were excluded from the study, still spent about 80 percent of their time in these activities. It is evident, therefore, that even when a secretary has assumed nonsecretarial functions, she has done so on a rather restricted basis.

Staff-level personnel spent appreciably more time in ancillary activities than did personnel

Table 2. Percentage of working time devoted to each of 20 activity categories, by administrative level, in five county health departments in Maryland

Activity category	High-echelon personnel						Staff-level personnel		
	Health officer and assistant health officer	Program director and assistant program director	Administrative assistant	Consultant	Supervisor	All high-echelon personnel	Senior staff	Junior staff	All staff-level personnel
Technical activities-----	16.4	41.5	6.9	36.4	19.7	25.3	26.3	43.3	40.9
Ancillary activities-----	14.8	11.0	17.0	12.9	22.2	16.9	30.3	39.8	38.4
Administration-----	38.1	32.7	58.9	31.4	42.0	38.3	19.6	7.9	9.5
Program planning within health department-----	7.9	8.0	9.7	8.5	10.1	9.0	11.4	.8	2.2
Giving supervision and training-----	14.7	12.4	10.2	10.2	22.6	16.6	3.3	2.6	2.6
Giving personnel supervision-----	8.1	6.1	10.2	5.7	16.3	10.8	.2	1.4	1.2
Planning and giving individual inservice training-----	2.3	1.2	0	1.0	4.1	2.5	1.2	.4	.5
Planning and giving group inservice training-----	4.3	5.1	0	3.5	2.2	3.3	1.9	.8	.9
Receiving supervision, education, and training-----	8.5	8.6	3.9	11.5	5.5	7.5	4.9	4.0	4.2
Supervision-----	1.2	3.8	1.2	.4	2.3	2.0	1.3	1.2	1.2
Education and training-----	7.3	4.8	2.7	11.1	3.2	5.5	3.6	2.8	3.0
Management-----	7.0	3.7	35.1	1.2	3.8	5.2	0	.5	.5
Personnel-----	3.4	2.4	8.1	.5	1.8	2.2	0	.1	.1
Financial-----	.9	.3	11.8	0	0	.7	0	.2	.2
General services-----	2.7	1.0	15.2	.7	2.0	2.3	0	.2	.2
Community relations and organization-----	28.8	12.1	14.2	16.4	14.6	17.0	23.4	7.8	10.0
Activities with other agencies-----	27.0	7.6	0	9.6	7.6	11.3	1.3	5.1	4.6
Joint program planning-----	12.0	4.8	0	8.2	6.7	7.3	.9	3.3	3.0
Activities with other agencies, except health departments-----	8.1	1.0	0	1.2	.9	2.3	.2	1.8	1.6
Activities with other health departments-----	6.9	1.8	0	.2	0	1.7	.2	0	0
Public information and education-----	1.8	4.2	14.2	4.9	6.1	5.0	20.5	2.5	5.0
Information services-----	.5	1.9	.8	.4	2.9	1.8	14.4	1.8	3.6
Planning mass media-----	.2	0	0	2.5	1.5	1.0	3.1	.1	.5
Talks to public-----	.2	2.2	13.4	.8	1.1	1.6	.1	.4	.4
Group organization-----	.9	.1	0	1.2	.6	.6	2.9	.2	.5
Giving professional education-----	0	.3	0	1.9	.9	.7	1.6	.2	.4
Social activities-----	1.9	2.5	3.0	2.9	1.5	2.1	.5	1.2	1.1

of the high administrative levels (table 2). The percentages were 38 and 17, respectively.

Negative correlations existed between time devoted to ancillary activities and both educational level and public health training (tables

Table 3. Percentage of working time devoted to each of 20 activity categories, by level of education, in five county health departments in Maryland

Activity category	Less than bachelor's degree	Bachelor's degree	Graduate degree
Technical activities-----	34.2	43.9	39.2
Ancillary activities-----	39.4	30.5	16.6
Administration-----	13.6	17.2	24.5
Program planning wit in health department-----	3.8	2.6	5.5
Giving supervision and training-----	4.7	8.3	7.4
Giving personnel supervision-----	2.5	5.6	4.3
Planning and giving individual inservice training-----	1.0	.8	1.0
Planning and giving group inservice training-----	1.2	1.9	2.1
Receiving supervision, education, and training--	4.5	4.5	7.0
Supervision-----	1.6	1.4	.6
Education and training--	2.9	3.1	6.4
Management-----	.6	1.8	4.6
Personnel-----	.2	.9	1.6
Financial-----	.1	.2	1.0
General services-----	.3	.7	2.0
Community relations and organization-----	11.8	6.9	16.9
Activities with other agencies-----	5.5	3.9	11.3
Joint program planning-----	3.5	3.5	6.4
Activities with other agencies, except health departments-----	2.0	.3	2.8
Activities with other health departments--	0	.1	2.1
Public information and education-----	6.0	2.6	4.4
Information services-----	4.2	1.8	1.2
Planning mass media-----	.7	.3	.8
Talks to public-----	.4	.3	1.8
Group organization-----	.7	.2	.6
Giving professional education-----	.3	.4	1.2
Social activities-----	.9	1.4	2.6

3 and 4). Nevertheless, workers with bachelor's degrees spent about 30 percent of their time, and those with graduate education, 17 percent of their time, in ancillary activities.

Participation in ancillary activities decreased with increase in salary (table 5). Personnel at the lowest end of the salary scale devoted more than 60 percent of their time to these activities, whereas those in the top salary bracket were similarly engaged only 12 percent of the time.

Administration

Approximately 17 percent of the time of all workers was devoted to administration, apportioned as follows: 4 percent to intramural program planning, 2 percent to management, 6 percent to giving supervision and inservice training, and 5 percent to receiving supervision, education, and training.

Medical personnel, who spent 34 percent of their time in these pursuits, greatly exceeded the average; nursing personnel approximated the average; and sanitation, laboratory, and secretarial personnel spent less than half the average amount of time in administration (table 1). Service differences in the several subcategories of administration closely paralleled the differences for all administration activities.

High-echelon personnel spent four times as much time as staff personnel in activities related to administration, and this differential, with minor variations, prevailed in all of the major subcategories of administration (table 2).

In general, the percentage of time devoted to administration as a whole and to each of its major subcategories was greater as level of education, amount of public health training, and salary increased (tables 3, 4, and 5). Only in the giving of supervision and inservice training was this pattern altered. Maximum participation in these activities took place among the workers who were in the group just below the top level in both education and salary.

Community Relations and Organization

For all workers, 12 percent of the time was devoted to community relations and organization. The three major subcategories, activities

with other agencies, public information and education, and giving professional education, accounted for 6 percent, 5 percent, and less than 1 percent of the time, respectively.

Medical service personnel devoted more than

Table 4. Percentage of working time devoted to each of 20 activity categories, by level of public health training, in five county health departments in Maryland

Activity category	No formal public health training	Undergraduate education	Graduate degree
Technical activities.....	38.7	36.7	24.0
Ancillary activities.....	36.1	29.0	16.2
Administration.....	13.2	24.5	26.7
Program planning within health department.....	3.3	4.9	6.7
Giving supervision and training.....	4.0	12.2	8.7
Giving personnel supervision.....	2.2	7.8	5.3
Planning and giving individual inservice training.....	.7	1.9	.9
Planning and giving group inservice training.....	1.1	2.5	2.5
Receiving supervision, education, and training.....	4.6	5.7	7.0
Supervision.....	1.2	2.5	.3
Education and training.....	3.4	3.2	6.7
Management.....	1.3	1.7	4.3
Personnel.....	.4	1.2	1.4
Financial.....	.3	0	.8
General services.....	.6	.5	2.1
Community relations and organization.....	10.5	8.4	31.0
Activities with other agencies.....	4.6	5.1	23.9
Joint program planning.....	2.9	4.8	12.8
Activities with other agencies, except health departments.....	1.7	.2	6.1
Activities with other health departments.....	0	.1	5.0
Public information and education.....	5.6	2.9	4.9
Information services.....	3.8	1.6	.8
Planning mass media.....	.5	.7	1.8
Talks to public.....	.7	.4	1.2
Group organization.....	.6	.2	1.1
Giving professional education.....	.3	.4	2.2
Social activities.....	1.3	1.2	2.1

twice the average time; nursing personnel approximated the average; and sanitation personnel spent about half the average time in these activities. The participation of laboratory personnel in community relations and organization was negligible. Interestingly enough, 8 percent of the time of secretarial personnel included in the study was spent in community relations and organization. Almost all of this time, however, was accounted for by their participation in information services (table 1).

None of the personnel gave professional education to any great extent.

The demands of public education and information upon the workers' time were greatest for secretarial workers. Medical and nursing personnel spent about the average percentage of time in these activities, and sanitation and laboratory personnel, much less than the average percentage of time. Information services accounted for almost all the time spent by secretarial personnel in public information and education and for more than half the time spent by nursing and sanitation personnel. Only the medical personnel devoted as much as 4 percent of their time to public education exclusive of information services.

It should be pointed out, however, that the category of public education refers to group or mass education and does not include the many instances of individual health education that occur in public health practice. Individual health education usually takes place as a part of direct service activities. The project found it impossible to separate time spent in individual health education from time spent in service to patients and clients, despite a number of serious efforts to do so.

Activities with other agencies absorbed 21 percent of the time of medical personnel, 6 percent of the nurses' time, and 4 percent of the time of sanitation personnel. Joint program planning accounted for slightly more than half of this time in each instance.

Personnel at the high administrative levels spent about twice as much time as junior staff personnel in community relations and organization and in each of its three major subdivisions (table 2). Health officers spent more than 25 percent of their time in these activities, al-

Table 5. Percentage of working time devoted to each of 20 activity categories, by annual salary level, in five county health departments in Maryland

Activity category	\$2, 000- \$2, 999	\$3, 000- \$3, 999	\$4, 000- \$5, 999	\$6, 000 and over
Technical activities....	27. 7	40. 8	27. 8	37. 3
Ancillary activities....	61. 3	36. 1	21. 6	11. 5
Administration.....	2. 7	11. 9	33. 2	28. 4
Program planning within health de- partment.....	. 1	2. 7	8. 4	6. 7
Giving supervision and training....	1. 4	3. 7	14. 4	9. 5
Giving personnel supervision.....	1. 4	2. 0	9. 1	5. 3
Planning and giving individ- ual inservice training.....	0	. 6	2. 6	1. 3
Planning and giving group inservice train- ing.....	0	1. 1	2. 7	2. 9
Receiving supervi- sion, educa- tion, and train- ing.....	. 8	4. 7	6. 4	7. 8
Supervision.....	. 3	1. 4	2. 1	. 6
Education and training.....	. 5	3. 3	4. 3	7. 2
Management.....	. 4	. 8	4. 0	4. 4
Personnel.....	0	. 2	1. 9	2. 0
Financial.....	. 1	. 2	. 8	. 6
General services..	. 3	. 4	1. 3	1. 8
Community relations and organization....	7. 8	10. 2	14. 2	21. 0
Activities with other agencies..	2. 4	5. 0	6. 6	16. 9
Joint program planning.....	. 2	3. 4	5. 1	9. 3
Activities with other agencies, except health departments....	2. 2	1. 6	1. 0	4. 2
Activities with other health departments....	0	0	. 5	3. 4
Public information and education..	5. 4	4. 9	5. 8	3. 9
Information serv- ices.....	5. 3	3. 4	2. 5	. 8
Planning mass media.....	0	. 5	1. 1	1. 1
Talks to public..	0	. 4	1. 7	1. 1
Group organiza- tion.....	. 1	. 6	. 5	. 9
Giving professional education.....	0	. 3	1. 8	. 2
Social activities.....	. 3	1. 0	3. 0	1. 5

most all of it in activities with other agencies.

An unexpected finding was the fact that workers with bachelor's degrees and those with undergraduate public health training tended to participate in community activities to a lesser extent than did workers without a college degree or formal public health training (tables 3 and 4). This situation was, in large measure, a result of their spending less time in activities related to public information and education. Personnel with graduate education and those with graduate public health training, on the other hand, engaged in community activities to a much greater extent than either of the other two classes of personnel, principally because of their extensive activities with other agencies.

Time devoted to community activities varied directly with salary, primarily because the top-salaried workers engaged in activities with other agencies to a much greater extent than did the other personnel (table 5). Their participation in public information and education and in professional education was generally not as extensive as that of the workers in other salary brackets.

Salient Patterns

From this study of the distribution of working time in five county health departments in Maryland, a number of patterns are evident. These relate to the differences according to service affiliation, administrative and educational levels, and salary.

Physicians and personnel at the higher levels of the administrative hierarchy tended to spend less than the average percentage of time in technical, or direct service, activities and in ancillary, or supporting, activities. On the other hand, relatively large segments of their time were devoted to activities in administration and community relations and organization.

While no clear-cut association was shown to exist between salary and participation in technical activities, a negative association between salary and participation in ancillary activities and positive associations between salary and participation in administrative activities and community relations and organization were found. In general, similar associations were found for level of education and public health training.

Thus, the picture that emerges is one in which relatively greater emphasis is placed on administrative and community activities by personnel on the higher rungs of the administrative ladder and in the higher salary brackets and by those who have had more education, both generally and specifically in public health, than by other personnel. However, staff-level personnel, those with less education, and workers in the lower salary brackets are nevertheless making major contributions to these activities since they constitute the larger proportion of health department personnel.

In view of these findings, a question that should be asked is: Is the preparation of public health workers, in terms of specific education and training, for administration and community relations and organization adequate? The findings that emerged from other portions of the Yale study would seem to indicate that this question should be answered in the negative. At least, it is a question that warrants attention.

As an example of the differences in patterns of activity among the several services, it will be recalled that the sanitation personnel devoted more time than the nursing personnel to technical activities, whereas the reverse was true with respect to administrative activities and community relations and organization. Why do these differences exist? Are the nurses failing to discharge satisfactorily all of their direct service responsibilities and overemphasizing administrative and community activities, especially supervision and inservice training? Or, are sanitation personnel failing to give proper emphasis to inservice training, for example? Or, is the present distribution of time by each service entirely appropriate to the nature and responsibilities of the service? In

order to determine which of these explanations is correct, an intensive evaluative case study of these health departments would have to be made. A time study can be of value to any individual agency only when it is combined with a qualitative case study.

In the health departments studied, public health is roughly one-third technical activities, one-third ancillary activities, one-sixth administration, and one-eighth community relations and organization. If the assumption is made that ancillary activities support the administration and community organization activities and the technical activities almost equally, and this assumption cannot be too far from the truth, then it can be said that roughly half of the health department time is devoted to administration and community activities and the other half to activities that provide direct service. A question that can be asked here is: Is this distribution of time proper? The answer will depend upon two major considerations: (a) the basic philosophy of public health under which the organizations operate and (b) the character of the communities involved and the nature of their health problems.

Finally, we should like to call special attention to the finding that ancillary activities consumed one-third of the health department time. This finding is more than food for thought; it is, we believe, an indication for a searching re-examination of public health practices.

REFERENCES

- (1) Cohart, E. M., and Willard, W. R.: A time-study method for public health—The Yale study. *Pub. Health Rep.* 70: 570–576, June 1955.
- (2) Cohart, E. M., Willard, W. R., and Hiscock, W. McC.: A method for studying the public health worker and his job—The Yale study. *Pub. Health Rep.* 70: 447–452, May 1955.

